DATA CONVERSION STRATEGY

Department of Transportation

DELPHI Program

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Introduction

Purpose

This document outlines the strategy for meeting the data conversion needs for the DELPHI Program as defined in the DELPHI Program Charter. The Data Conversion Strategy provides DOT a road map for performing the conversion of data from DAFIS to the new DELPHI system. The approach used to fulfill this strategy is also presented in this document. This strategy is based upon the proven conversion methods practiced by the Oracle Conversion, Integration, Migration Group.

The Data Conversion Strategy will be used:

- To communicate to DOT the strategy for successfully converting their legacy data in DAFIS to the new DELPHI system.
- As a guide for developing and executing the conversion. All members of the team, will review, understand, and follow this strategy.
- By the project manager to understand how the DELPHI team plans to develop and execute the data conversion, and how the data conversion effort may impact the overall project.

The Data Conversion Strategy will be provided to all members of the DELPHI team.

Scope and Application

The Data Conversion Strategy will provide direction for all phases of the conversion effort including design, development and validation. This strategy encompasses the data conversion activities for the Global Design, Global Build, and subsequent OA deployments.

Conversion Approach

Based on the type and volume of data that will be converted to DELPHI, two different approaches will be employed. They are:

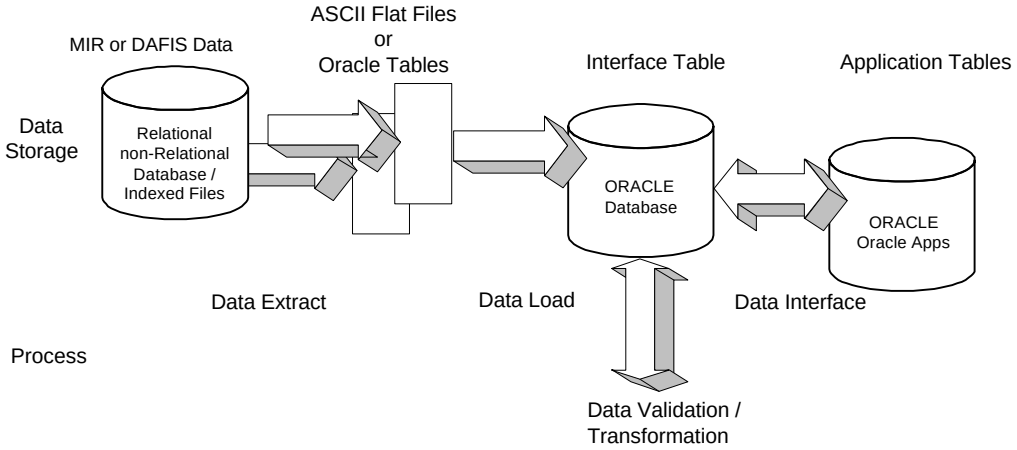
- convert the data via an automated fashion; and
- manual entry of the data into DELPHI.

A combination of both these approaches may also be used.

The following diagrams and descriptions outlines each type of data conversion approach.

Automated Conversion Approach Diagram

This section provides a graphical representation of the automated conversion that will be used to convert the DAFIS data objects to DELPHI. An explanation of this strategy follows.



Automated Conversion Approach

1. Identify the DAFIS Data Sources and Age of Data to Convert

Initially, an analysis will be performed to determine what data will be converted to the DELPHI system. This analysis consists of a review of existing DAFIS functional and technical documentation and by interviewing data owners of the DAFIS systems. It also determines which data should be converted based on age. This task is also addressed in the DELPHI Data Audit Strategy Document.

2. Prepare Conversion Data Mapping

The data mapping process provides detailed lists of the DAFIS data sets and data elements that will be moved into the DELPHI tables during the data conversion. During this process, decisions will be made regarding information needed by the Oracle application that is not present in the DAFIS system. Default settings, user input, and new data entries are some of the issues that are addressed during this phase.

The output of this item are data mapping tables that show what is needed for the DELPHI target application processing to meet business operational requirements and where these data elements originate. Based on this mapping, a design of the DAFIS data extract is defined.

3. Download Programs

Download programs extract the identified conversion data elements from DAFIS. These download programs write the conversion data to an ASCII flat file or an Oracle database table. The DELPHI team members are responsible for writing these download programs.

4. Upload Program

Once data has been placed in an ASCII flat file or Oracle table and physically moved onto the same computer where the DELPHI Oracle RDBMS resides, programs will be written and run to move data, validate data, and insert/ update standard values into default fields. It is common practice for a single loader program is written for each data table being loaded.

5. Creation of Interface Table

Legacy source data will be loaded into temporary or interface tables before loading the DELPHI Oracle application production tables. The interface tables provide a location to manipulate and translate the data as needed before validating the data and loading the DELPHI application production tables. These temporary interface tables will be built before executing the loader script to populate these tables. The interface tables may be standard Oracle application interface tables or custom interface tables.

6. Translation Programs

Scripts are developed to translate data from the temporary interface tables into useful data for the Oracle DELPHI application. An example would be the conversion of the date format that exists in the legacy system into an Oracle format. There may be several or no translation programs, depending on the type of data and the format of that data.

7. Interface Programs

Interface program scripts are used to populate the production database. The purpose of the interface programs is to move the data to the target tables and validate the data.

8. Application Production Table

This data table is the location where the converted data resides. These tables are identified early during the initial data mapping. These tables define some of the translation programs that ensure 100% of the information that the target applications require is present in the final data structures.

9. Testing

Data conversion testing is integrated into the entire conversion process to ensure validation reports are generated from DAFIS, and compared later with the converted data.

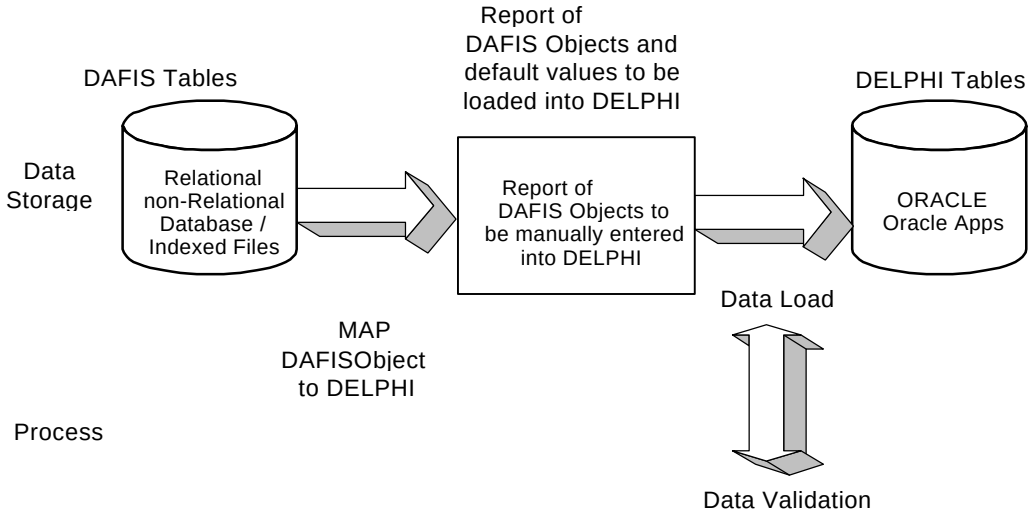
The approach will be to use as many standard reports available in the DAFIS and DELPHI systems for the final data validation. If no reports support the validation requirements, then custom reports will be created for specific validation purposes

10. Write and Perform Conversion Execution Plan

The conversion execution plan is the document that will be followed during the actual conversion. (See further explanation in a later section of this document)

Manual Conversion Approach Diagram

This section provides a graphical description of the manual conversion approach that will be used to convert data from DAFIS to the DELPHI applications. An explanation of this strategy follows.



Manual Conversion Approach

1. Identify DAFIS Data Objects to Convert or Load into DELPHI

An analysis will be performed to determine what data will need to be manually converted to the DELPHI system. This analysis will also identify data that does not currently exist in DAFIS. The analysis includes a review of existing DAFIS and DELPHI functional and technical documentation. It also includes interviewing current data owners of the DAFIS system. Additionally the analysis determines which data will be converted based on the age of the data.

2. Conversion Data Mapping

The data mapping process provides detailed lists of the DAFIS data sets and data elements that will need to be moved into the DELPHI tables during the manual data conversion. During this process, the corresponding GUI forms will be identified which manual input. Additionally, some decisions will be made regarding the information needed by the Oracle application that may not be present in DAFIS system. Default settings, user input, and new data entries are some of the issues that are addressed during this phase.

The outputs of this effort are data mapping tables that show what is needed for the DELPHI Oracle target application to meet business operational requirements and where these data elements originate. Based on this mapping, a design of the DAFIS data extract is defined.

3. Create Reports of Mapped DAFIS Objects to be Manually Converted to DELPHI

Reports will be created that lists the data objects and any associated data elements that must be entered into the corresponding DELPHI GUI forms. These reports are manually entered into the DELPHI system.

4. Document the Navigation Path and Zones Required for Manual Entry of the specified data Object

In addition to creating the reports detailed above, the navigation path and alternate entry zones are documented to expedite the manual entry of each of the data objects.

5. Manually Enter the information into DELPHI

Using the reports created above, selected staff will manually enter the data into the specified DELPHI GUI forms.

6. Verification and Validation

Verification and validation will be performed to assure that the manually entered data has been entered and stored correctly. For example, the staff will periodically verify that the data object and its associated components have been properly saved to the DELPHI tables. If an issue is identified, the staff member will document the data object in question and proceed to the next object to key enter.

7. Write and Perform Conversion Execution Plan

The conversion execution plan is the document used to perform the actual conversion. (See further explanation in a later section of this document)

Automated Tools

In addition to traditional application coding techniques, the DELPHI team will use automated conversion tools whenever possible to expedite the data conversion. Some of the tools that can be used are:

- Software AG Database Tools
- Smart Corporations: SMART DB Workbench
- Evolutionary Technologies: ETI Extract
- Oracle SQL Loader

Using these tools has the following advantages:

- The automated conversion tools reduce the need for traditional programming skills.
- Automated conversion tools can be used to build reusable templates for multi-site implementations.

Conversion Execution Plan

Each data object to be converted will have a conversion execution plan which outlines the data mapping requirements and specific steps necessary to complete the data conversion. The Conversion Execution Plan will include:

- Data Conversion Process Flow Diagram
- Identification of source and target files
- Data element mapping from the DAFIS to DELPHI systems
- Data Translation requirements
- Conversion Program Description
- Conversion program unit test execution and validation plan

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